



Published in final edited form as:

J Glaucoma. 2021 August 01; 30(8): e375–e376. doi:10.1097/IJG.0000000000001871.

Optical coherence tomography angiography and visual field progression in primary angle closure glaucoma

Harsha L Rao^{1,2}, Thanemozhi S³, Zia S Pradhan³, Shruthi Sreenivasaiah³, Dhanaraj A S Rao³, Narendra K Puttaiah¹, Sathi Devi³, Sasan Moghimi⁴, Kaweh Mansouri^{5,6}, Carroll AB Webers², Robert N Weinreb⁴

¹Narayana Nethralaya, 63, Bannerghatta Road, Hulimavu, Bangalore 560076, India. ²University Eye Clinic Maastricht, University Medical Center, Maastricht, the Netherlands. ³Narayana Nethralaya, 121/C, Chord Road, Rajajinagar, Bangalore 560010, India. ⁴Hamilton Glaucoma Center, Shiley Eye Institute, and Viterbi Family Department of Ophthalmology, University of California San Diego, La Jolla, CA, United States. ⁵Glaucoma Research Center, Montchoisi Clinic, Swiss Visio, Lausanne, Switzerland. ⁶Department of Ophthalmology, University of Colorado, Denver, CO, United States.

Dear Editor,

We thank Dr Hollo for his interest in our study.¹ He has opined that the presence of cataract (nuclear opacity and/or posterior subcapsular opacity) could have confounded the results of our study in several ways. First, increasing lens opacity during the follow-up could have caused a reduction of mean deviation (MD) on visual fields (VF), and thereby show a falsely greater rate of change in MD (progression). Second, the presence of lens opacity could have caused a reduction in the signal strength index (SSI) of the OCT scans, and thereby show lower vessel density values. We agree with these points and have earlier reported on both these aspects; the effect of lens opacity on VF indices,² and the importance of SSI of OCTA scans on the vessel density measurements.³ Moreover, we believe that the published analysis is correct.

To address the issues raised by Dr Hollo, we provide the following data. Of the 46 eyes included in the study, 16 were pseudophakic, 14 eyes had clear lens, 10 eyes had early nuclear sclerosis (NS grade 1), 4 eyes had NS grade 2 and 2 eyes had posterior subcapsular cataract on the day when the OCT scans were acquired. Best corrected visual acuity was 20/20 in 29 eyes, 20/30 in 13 eyes and 20/40 in 4 eyes. In brief, most included eyes were either pseudophakic, had no cataract or had very minimal cataractous changes. As described in the methods section, SSI of 35 and above was considered as the requirement for inclusion.

Corresponding author: Harsha L Rao, Narayana Nethralaya, 63, Bannerghatta Road, Hulimavu, Bangalore 560076, India., Ph: +91-80-62221449, Fax: +91-80-23377329, harshalaxmanarao@gmail.com.

Financial disclosures: Rao HL: Santen (C), Carl-Zeiss Meditec (C, S), Allergan (C); Thanemozhi S: none; Pradhan ZS: none; Sreenivasaiah S: none; Rao DAS: none; Puttaiah NK: none; Devi S: none; Moghimi S: none; Mansouri K: Santen (C), Allergan (S), ImplanData (C); Webers CAB: Alcon (S), Allergan (C), Pfizer (C), Santen (C); Weinreb RN: Optovue (S), Meditec-Zeiss (S), Heidelberg Engineering (S), Allergan (C), Bausch & Lomb (C), NiCox (C), Centervue (S), ImplanData (C). Supported in part by R01 EY029058 (RNW) for the National Eye Institute and an unrestricted grant from Research to Prevent Blindness (NY, New York)

Therefore, it is unlikely that the lens status affected the MD change, SSI or the results of our study. Dr Hollo also has suggested using visual field index (VFI) instead of MD to determine glaucoma progression as VFI is less influenced by cataract compared to MD. However, VFI has a few disadvantages. First, it is less sensitive to changes in early disease.⁴ Second, VFI is based on total deviation values when MD goes beyond -20 dB, rather than pattern deviation values. This can cause the VFI to show a falsely large reduction and affect the calculation of rate of change.⁵ Therefore, we feel that MD was a better parameter to be used in our study.

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